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ECA announces hearings on sulphur extraction effects

The Alberta Environment Conservation Authority announced it will hold public hearings into the environmental effects of the province's sulphur extraction gas plants.

Requested by Environment Minister William Yurko, the hearings followed lawsuit last summer which resulted in two oil companies paying 15 farm families in the Pincher Creek area $700,000 out of court. They had sued for $1.5 million, claiming nearby gas plants were damaging

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Honourable W.J. Yurko
Minister

Dr. E.E. Ballantyne
Deputy Minister

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their property, their livestock and their health. The first of the hearings will be held October 2 in Pincher Creek.

However, Conservation Authority chairman Dr. Walter Trost said, the hearings are only part of an "ongoing process of evaluating and upgrading production in all our resource industries." Other than that, he added, he could see no "one significant reason" for the inquiry, including the Pincher Creek case.

The authority will look into laws and regulations affecting plant operations, "particularly those relating to pollution control." The pollution problem has become more important than ever in recent years, said Dr. Trost, because Alberta plants have been stockpiling sulphur they can no longer sell as quickly as they could "a few years ago."

The inquiry is expected to finish its report by January, 1973. Following the public hearings in Pincher Creek, the board will move on to Red Deer October 5, Whitecourt October 11, Calgary October 15 and Edmonton October 19.

Dr. Trost said all submissions made during the inquiry will be made public. His board has enlisted the help of a task force from the province's energy resources, lands and forests, environment and mines and minerals departments.

U.S. company generates electricity from garbage

For several years there have been studies, and considerable casual comment, about the use of solid waste for electric generation. One of these planned for some time has now become an actuality.

On May 24, the city of St. Louis, Missouri, officially dedicated the prototype project for burning of shredded refuse at the Meramac Plant of Union Electric Company.

The city received a federal solid waste disposal demonstration grant for a three year program to demonstrate the use of refuse as supplementary fuel in utility boiler furnaces. The plant has been operating several months on a pilot basis and now this prototype is going into the phase to find out how it will actually perform.

Refuse is generated at a rate of about four to five pounds per capita per day in the St. Louis metropolitan area. Two pounds of refuse is equivalent to about one pound of coal. About 4,000 tons of burnable refuse per day is collected in the St. Louis area, equivalent to 2,000 tons of coal per day. A boiler designed to fire pulverized coal should be able to burn about 250 to 350 tons per day of refuse per 100 MW of boiler capacity.

The objectives, of course, are a reduction in St. Louis metropolitan area solid waste disposal pollution and the possible prospects for lower fuel cost in the generation of electricity.

Costs of disposal of metropolitan area solid wastes are increasing exponentially as fast or faster than utility fuel costs. Incineration and land fill are becoming less and less attractive because of cost, pollution, and aesthetics. There is a distinct possibility that a significant number of metropolitan areas may be willing to pay a utility to burn their refuse. The daily per capita rate of trash generation is increasing. The capital cost required to modify existing utility boilers or to provide for refuse firing in new boilers is small compared to any other acceptable existing or prospective method of solid waste disposal.

Widespread recycling of solid wastes, particularly household wastes, into usable products is expensive because of the need to separate the trash into discreet components. Union Electric now has in service and under construction, more than twice the boiler capacity required to burn all the refuse collected in the St. Louis area.

Municipal household refuse is collected by the city of St. Louis and shredded by the city at their existing incinerator plant. The refuse, shredded to one inch to two inch size in a hammermill, is transported via 20 ton capacity, self unloading, trailer trucks to Union Electric's Meramec Plant about 15 miles south of the incinerator.

The refuse is dumped into a city owned receiving hopper and transported pneumatically to a U.E. storage bin. From storage the refuse is pneumatically transported via four pipes to the boiler. Refuse firing is at a rate equal to 10% to 15%, by heat value, of the full load fuel requirement of the unit.

The boiler is a 1952 Combustion Engineering, tangentially fired, radiant reheat, pulverized coal unit, equipped for alternate full load firing of natural gas. Refuse is fired directly to the furnace via one level of four burners (one at each corner). Each of the four refuse burner nozzles replaces one load gas burner nozzle. No other major modifications have been made to the boiler or its pneumatic control system.

The refuse, fired at a more or less constant rate, and the combustion control system is expected to automatically provide the additional coal or gas necessary to carry the load on the boiler.

The city designed, installed, operates and maintains the facilities necessary to collect and shred the refuse at its incinerator and is responsible for the refuse transport to Meramec and responsible for the receiving facility at the plant. During the prototype project, the city delivers the refuse to Union Electric at no cost. The company designed, installed, operates and maintains the facilities necessary to store and fire the refuse in the boiler.

Union Electric also installed the storage and firing facilities at Meramec and operates and maintains these facilities. (The utility receives no money from either federal or St. Louis authorities.)

Union Electric maintains complete control of the refuse firing at Meramec and has to determine if and when it is ever necessary to immediately reduce or discontinue the refuse firing if the reliable, full load operation of the unit appears to be in jeopardy.

There are some basic drawbacks to refuse firing exclusive of its effects on boiler operation. Experience indicates that the shredded refuse cannot be stored for more than a few days so it must be burned as it is collected.

Because of the low density of refuse, transport from collection to power plant is a significant portion of disposal cost. Refuse rail and barge transport have not yet been developed so current transport is limited to trailer trucks which have capacities of only 20 to 25 tons. Transportation costs to the power plant could represent a higher portion of the cost of utility burning of refuse than boiler operation costs and of amortization of the refuse firing capital costs.

The estimated costs of the prototype refuse plant are:

Federal Grant Authority	
U.S. Environmental Protection Agency	$1,800,000
City of St. Louis	350,000
Union Electric Company	550,000
	$2,700,000

The refuse will be delivered to the plant at the expense of governmental agencies wishing to dispose of their refuse. The operation and maintenance of the plant is the utility's responsibility.

The initial start up was in early April with steady operation commencing at the dedication time. As is the case with any prototype, there are problems and situations, often unforseen, to be solved.

Task force makes recommendations to reduce garbage

Separation of garbage in the home and a $2 licence plate fee to finance disposal of derelict autos were among recommendations in a report released by the provincial government's Task Force on Urbanization and the Future.

In its 31-page final report the task force's solid waste management committee urges that extensive educational programs be developed to help overcome what it calls the "littering syndrome" and the "throw-away cult."

Solid waste committee chairman G. W. Sinclair said copies of the report had been presented to Environment Minister Bill Yurko and Highways Minister Clarence Copithorne.

Mr. Sinclair said the committee hoped the provincial government would consider implementing all or most of its recommendations.

"We're hopeful the majority of the auto-disposal recommendations will be accepted and machinery for its implementation set up within the next legislative year."

Mr. Sinclair said the committee had favorable response from the department.

Published version of the committee's report, printed on recycled paper, will be available.

The result of eight months work by 40 people, the report, entitled "Waste Not, Want Not," deals with recycling and future trends in solid waste management, sanitary landfill as a disposal method, and the disposal of abandoned autos.

In suggesting separation of garbage in the home into four major components - paper, metal, glass, and miscellany (wet garbage, plastics) - the committee says this would be an "extremely significant first step towards extensive reutilization of much of the waste now created in the home."

It also calls on industry to separate its waste and to develop processes for re-using glass, paper and metal.

The committee recommends creation of an all-aluminum or all-tin pop can to enable their reuse in metal recycling plants without the costly process of separating sides from tops; and the initiation of a standard pop bottle like the standard beer bottle.

Legislation should be enacted it says, making it illegal to market soft drinks in Alberta in containers other than the official standardized one.

Besides calling on the provincial government to set up public education programs in solid waste management, the committee also suggests it should help establish regional disposal systems and should undertake studies into the metal and glass recycling industries.

Local governments are urged to "seriously explore, wherever feasible, the practical possibilities of operating segregated garbage collections" aimed at recovering as much reusable material as possible for the recycling industry.

The committee even delved into such down-to-earth possibilities as selling licence plates in plastic litter bags, and providing segregated litter cans on highways.

The subcommittee studying sanitary landfills found the main problems facing this disposal method were difficulties in acquisition of land for sites and a poor public image.

It suggested a number of short-term projects be undertaken to show what can happen when a landfill site is operated properly and efficiently towards a goal such as a park, and recommended it be made easier for municipalities to acquire land outside their boundaries for landfill use.

A sophisticated system which the report says would make Alberta an outright leader in the disposal of abandoned cars is described.

Financed at least initially by the $2 licence plate levy (which would provide $1,500,000 a year in Alberta) the system would establish holding sites for junk cars to economically send them on their way to the recycling plant; stiffen deterents against abondoning cars or keeping them on private property; and require auto wreckers to clean up their yards.

Article by Andy Ogle

Reprinted from the Edmonton Journal.

IN BRIEF

Cardinal River Coals Ltd. of Hinton has been issued an approval by the Department of the Environment's Standards and Approvals Division for the construction of surface drainage control facilities at their Luscar coal mining operation.

The company was fined under the federal Fisheries Act recently, and Environment Minister W. J. Yurko insisted that they install controls to avoid future pollution of Luscar and Cabin Creeks.

The company will control impurities, such as coal fines and sediment from runoff, by building small dams across the creeks at the edge of their property, creating storage ponds where the solid particles will settle out of the water before it leaves the mining area.

Under the conditions of the approval, the company is responsible for the collection of regular samples of water leaving the storage ponds, and analysis for a number of water contaminants. This information, together with production data, shall be submitted to the Division of Pollution Control on a monthly basis.

As well, the company is required to closely monitor their deep disposal well. This well has been in operation for some time. The plant takes water from the well for in-plant use in washing coal. The waste water then goes through a thickening and settling process, after which the water is returned to the well for re-use.

The approval states that flows in and out of the well must be monitored to determine the amount of seepage out of the well or infiltration by water into the well. These factors may have an effect on groundwater in the area.

All uncontrolled releases of water contaminants on plant property, or accidental spills of water contaminants to the creeks must be reported immediately to the department, and the company is required to immediately activate contingency procedures to prohibit water pollution or any other environmental hazard.

The approval is valid for two years, at which time the system will be thoroughly reviewed to ensure its effectiveness in controlling water pollution from the mining operation. The approval may be amended or revoked anytime prior to expiry at the discretion of the Director of Standards and Approvals.

Anti-pollution devices, now standard equipment in automobiles produced in North America, may not work as well in Canada as they do in the U.S., says Dr. Roger P. Henry, Dept. of Mechanical Engineering, U of Ottawa. The devices, built to conform to standards developed in California, do not work well in Canada's cold weather.

The California standards are based on a "25-minute driving cycle" that approximates a drive from home to the office in rush-hour traffic. Researchers have found that low-speed driving creates more pollution than high-speed highway driving. The standards were accepted by the U.S. government and the Canadian government followed suit.

Dr. Henry says the reason the devices are inefficient in cold weather is because the engine must be completely warmed up before the devices can operate. Short drives on extremely cold days do not allow the engine to warm up sufficiently.

He is conducting his research on a 1972 Chevrolet V-8 engine installed in an instrumented engine-test cell where environmental effects can be simulated and closely studied. If his findings corrobate his present thinking, recommendations for improvements could follow.

Automotive researchers are now working on additional controls, still based on the California standard, aimed at further reducing nitrogen oxide and hydrocarbon emissions. By 1976, Canadian drivers likely will find either a "catalytic converter" or a "thermal reactor" built into the exhaust system of their automobiles.

According to a study initiated by Environment Canada to examine the consequences of large quantities of oil coming to Cherry Point refineries in the U.S. by supertanker through hazardous international shipping lanes on the west coast, a major oil spill every 20 years can be expected if giant tankers use the Pacific route. Tanker spills would dump "upward of 20,000 tons of crude oil on the sea in a manner that would seriously affect the Canadian coastal environment".

The seven-month study called "West Coast Oil Threat in Perspective", was performed by Howard Paish & Associates under contract by Environment Canada. They recommend that the Canadian government "pursue with the utmost vigor every possible avenue" to insure international protection of the environment from oil spills.

The report estimates identifiable losses of about $5,000,000 with the kind of spill that could occur. In addition, there would also be biological and social damages.

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